UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
ONE CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: **MA0025852**

NAME AND MAILING ADDRESS OF APPLICANT:

Battelle Duxbury Operations
397 Washington Street
Duxbury, MA 02332

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Battelle Duxbury Operations
397 Washington Street
Duxbury, MA 02332

RECEIVING WATER(S): **Duxbury Bay (MA94-15)**

RECEIVING WATER CLASSIFICATION(S): **SA**

SIC CODE: **8731 Commercial Physical and Biological Research**

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I. Proposed Action, Type of Facility, and Discharge Location

The above named applicant has applied to the U.S. Environmental Protection Agency (EPA) for re-issuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge into Duxbury Bay. Battelle Duxbury Operations is a research facility specializing in marine and freshwater research that is located in Duxbury, MA. Discharge from the facility includes flow thru seawater, wash water from the laboratories, air conditioner condensate, and treated tank water from the New England Aquarium Rehabilitation Center that is located on the property. For the location of the facility refer to Attachment A.

The current permit was signed August 25, 1999 and became effective thirty (30) days later. This permit expired August 25, 2004. EPA received a completed permit renewal application from Battelle dated August 10, 2004. The permit has been administratively continued.

II. Description of Discharge

A quantitative description of the effluent parameters based on recent discharge monitoring reports (DMRs) is shown on Attachment B of this fact sheet.

III. Receiving Water Description

Battelle discharges into the Duxbury Bay (MA94-15), which is part of the south coastal watershed. Duxbury Bay is classified as a Class SA waters by the Massachusetts Department of Environmental Protection (MassDEP). The Massachusetts Surface Water Quality Standards, 314 Code of Massachusetts Regulations ("CMR") 4.05(4) (b) state that Class SA waters have the following designated uses: *These waters are designated as an excellent habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation. In approved areas they shall be suitable for shellfish harvesting without depuration (Open Shellfish Areas). These waters shall have excellent aesthetic value.*

Section 303 (d) of the CWA requires states to identify those waterbodies that are not expected to meet water quality standards after the implementation of technology based controls and, as such require the development of total maximum daily loads (TMDL). The 2006, 303 (d) report states that Duxbury Bay (MA94-15), including waters north and west of a line from Saquish Head to the tip of Plymouth Beach and from there to High Cliff, Plymouth excluding Back River and Bluefish River, Duxbury and Jones River, Kingston, is not attaining water quality standards because of pathogens.

MassDEP is required under the CWA to develop a Total Maximum Daily Load (TMDL) for a waterbody once it is identified as impaired. A TMDL is essentially a pollution budget designed to restore the health of a water body. A TMDL first identifies the source(s) of the pollutant from direct and indirect discharges in order to next determine the maximum amount of pollutant (including a margin of safety) that can be discharged to a specific water body while maintaining water quality standards for designated uses. It then outlines a plan to meet the goal.
A TMDL has not yet been developed for Duxbury Bay. In the interim, EPA is developing the conditions for this permit based on a combination of technology based standards, water quality

standards, and anti-degradation provisions. If a TMDL developed in the future identifies that the discharge from the facility is causing or contributing to the non-attainment of surface water quality criteria, the permit may be re-opened.

IV. Limitations and Conditions

The effluent limitations of the draft permit, the monitoring requirements, and any implementation schedule (if required) may be found in the draft permit.

V. Permit Basis: Statutory and Regulatory Authority

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a NPDES permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. This Draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations. During development, EPA considered the most recent technology-based treatment requirements, water quality-based requirements, and all limitations and requirements in the current/existing permit. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. The general conditions of the Draft Permit are based on 40 CFR §122.41 and consist primarily of management requirements common to all permits. The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308(a) of the CWA in accordance with 40 CFR §122.41(j), §122.44(i) and §122.48.

A. Technology-Based Requirements

Subpart A of 40 CFR §125 establishes criteria and standards for the imposition of technology based treatment requirements in permits under Section 301(b) of the CWA, including the application of EPA promulgated effluent limitations and case-by-case determinations of effluent limitations under Section 402(a)(1) of the CWA.

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (See 40 CFR §125 Subpart A) to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines for non-POTW facilities must have been complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989 [See 40 CFR §125.3(a)(2)]. Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA can not be authorized by a NPDES permit.

EPA has not promulgated technology-based National Effluent Guidelines for discharges from marine and freshwater research facilities. In the absence of applicable technology-based effluent guidelines, the permit writer is authorized under Section

402(a)(1)(B) of the CWA to establish effluent limitations on a case-by-case basis using Best Professional Judgement (BPJ).

B. Water Quality-Based Requirements

Water quality-based criteria are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water-quality standards (See Section 301(b) (1)(C) of the CWA). Water quality-based criteria consist of three (3) parts: 1) beneficial designated uses for a water body or a segment of a water body; 2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s) of the water body; and 3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts State Water Quality Standards, found at 314 CMR 4.00, include these elements. The State Water Quality Regulations limit or prohibit discharges of pollutants to surface waters and thereby assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, be used unless site-specific criteria are established. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts. The Commonwealth of Massachusetts has a similar narrative criteria in their water quality regulations that prohibits such discharges [See Massachusetts 314 CMR 4.05(5)(e)]. The effluent limits established in the Draft Permit assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained.

C. Anti-Backsliding

EPA's anti-backsliding provision as identified in Section 402(o) of the Clean Water Act and at 40 CFR §122.44(l) prohibits the relaxation of permit limits, standards, and conditions unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued. Anti-backsliding provisions apply to effluent limits based on technology, water quality, BPJ and State Certification requirements. Relief from anti-backsliding provisions can only be granted under one of the defined exceptions [See 40 CFR §122.44(l)(i)].

D. Anti-Degradation

Federal regulations found at 40 CFR Section 131.12 require states to develop and adopt a statewide antidegradation policy which maintains and protects existing instream water uses and the level of water quality necessary to protect the existing uses, and maintains the quality of waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water. The Massachusetts Antidegradation Regulations are found at 314 CMR 4.04.

The Draft Permit includes new monitoring requirements for enterococcus bacteria, new limits for chronic Whole Effluent Toxicity (WET) testing and more stringent limits for fecal coliform bacteria and acute WET testing. In addition, the Draft Permit includes a compliance schedule for new copper limits that requires the facility to evaluate and replace possible sources of copper contamination. Given the new stringent permit effluent limits and monitoring requirements, it is likely that the facility will not increase its loading to the receiving water compared to its existing operations. EPA anticipates that MassDEP shall make a determination that there shall be no significant adverse impacts to the receiving waters and no loss of existing uses as a result of the discharge authorized by this permit, and that no additional antidegradation review is warranted at this time.

VI. Explanation of the Permit's Effluent Limitation(s)

A. Facility Description

The Battelle facility, located in Duxbury, MA, specializes in marine and freshwater environmental research. A detailed site map, including the locations of the buildings and of the outfall, is included in Attachment C. The facility obtains freshwater from the Duxbury Municipal system for the washing and rinsing of glassware and equipment in the boat house, chemistry building, and toxicology building. All solvent rinsed glassware must be air dried in an exhaust hood until visibly dry before the glassware is washed. Any solids contained in the glassware must be removed and disposed of as solid waste prior to washing the glassware. Freshwater is also used to maintain the pressurized seal on the intake pump used to pump seawater from Duxbury Bay. According to the facility, the seal-water comes into contact with a Teflon O-Ring, a stainless steel pump shaft, and a Teflon/graphite fiber.

Seawater is continuously pumped from Duxbury Bay through an intake pipe consisting of a three foot section of eight inch diameter PVC pipe containing 5/8" diameter holes. The end of the pipe is capped to prevent the entrance of large debris and organisms. Seawater is used on-site as flow-thru water and in the boat house, toxicology building, and the New England Aquarium (NEA) rehabilitation center. The boat house has a seawater connection for the washing and rising oceanographic equipment. In the toxicology building, seawater is used for culturing and testing aquatic organisms.

The New England Aquarium (NEA) has a rehabilitation center at Battelle for the rehabilitation of rescued or sick animals such as porpoises, seals, or sharks. The center maintains two seawater tanks, the rehabilitation pool and critical care pool, to house injured animals or in preparation of the arrival of an injured animal. According to the facility, all vitamins and medicines are administered to the animals either orally or topically, none are added directly to the seawater. The seawater from the tanks is connected in a closed loop system to a sand filter, a protein skimmer and an ozonation system.

B. Permitted Outfall

The facility has one outfall, Outfall 001, which discharges freshwater and seawater to Duxbury Bay. Freshwater discharges are from the washing and rinsing of equipment in the boathouse,

chemistry building, and toxicology building. Seawater discharges are from the boat house, toxicology building, and NEA rehabilitation center. In addition, air conditioner condensate from the chemistry and toxicology buildings is routed through Outfall 001. Except for wastewater generated by the NEA, all waste streams are routed through an ultraviolet (UV) treatment system prior to discharge. Seawater in the NEA rehabilitation center undergoes treatment with a protein skimmer, sand filter, and ozonation in a closed loop system. Battelle states that wastewater from the NEA is tested for a zero detection level of fecal coliforms before discharge and is re-cycled through the closed loop system until that level is achieved. Upon discharge, the NEA wastewater is commingled with the wastewater exiting the UV system before ultimately discharging from Outfall 001. Refer to Attachment D for a schematic wastewater flow diagram.

The Existing Permit lists a second outfall for the facility, Outfall 003. This outfall historically discharged the freshwater used to maintain the pressurized seal on the seawater intake pump. The permittee has conducted a recent inspection of the site and saw no evidence of "a discernable conveyance between the discharge point and Duxbury Bay". This is consistent with observations made by EPA on a site visit of the facility in February of 2007. Based on this determination, Outfall 003 is not considered a point source discharge requiring an NPDES permit and has subsequently been removed from the Draft Permit.

C. Derivation of Effluent Limits under the Federal CWA and/or the Commonwealth of Massachusetts' Water Quality Standards

The Draft Permit establishes effluent limitations and/or monitoring requirements for flow, pH, fecal coliform bacteria, and copper. The effluent limits and monitoring requirements are described below:

1. Flow

The Draft Permit contains a daily maximum flow limit of 462,600 gallons per day (gpd) and a monthly average flow limit of 400,000 gpd. These limits reflect an increase from the Existing Permit limits of 410,000 gpd daily maximum and 290,000 gpd monthly average in accordance with 40 CFR §122.44(l). Battelle exceeded the Existing Permit monthly limit in October of 1999 and January-May of 2000 with average monthly flows of 311,048 gpd, 348,072 gpd, 350,530 gpd, 371,474 gpd, 375,915 gpd, and 381,975 gpd respectively. The flow at Outfall 001 is measured via a flow meter imbedded in the outfall pipe.

According to the facility, the seawater intake pump has a 500 gallons per minute (gpm) capacity and must be throttled-back both to accommodate the 300 gpm discharge pump connected with the UV system and to comply with the permit limits. The decreased flow has resulted in periodic fouling and sedimentation within the piping system. In the permit application, Battelle requested to increase the monthly limit to 400,000 gpd and the daily maximum limit to 462,600 gpd to include the discharge of air conditioner condensate and to better accommodate the pumping capacity of the on-site equipment.

The Existing Permit is unclear in its derivation of the permit flow limits. The Draft Permit daily maximum flow limit is based upon a continuous discharge from the 300 gpm UV pump and the

maximum discharge from the NEA rehabilitation center, which does not go through the UV system (see Attachment D). A continuous discharge of 300 gpm over 24 hours will result in a flow of 432,000 gpd. The maximum flow from the NEA rehabilitation center, which is associated with emptying the tanks, is 30,600 gpd and is the same amount as is listed in the Existing Permit. The additional seawater intake associated with the increased permit limits will be used as flow-thru seawater for Battelle (represented by the 417,980 gpd in Attachment D). The Draft Permit monthly average limit represents approximately 85% of the daily maximum limit.

2. pH

Massachusetts State Surface Water Quality Standards require the pH of Class SA waters to be within the range of 6.5 to 8.5 standard units (s.u.). The Draft Permit identifies a pH permit limit range of 6.5 to 8.5 for Outfall 001, which has been established in accordance with the State Surface Water Quality Standards. The discharge shall not exceed this pH range unless due to natural causes. In addition, there shall be no change from background conditions that would impair any uses assigned to the receiving water class. The facility has had no pH exceedances for Outfall 001.

3. Bacteria

The Draft Permit contains a daily maximum limit of 28 colonies per 100 ml water and a monthly average limit of 14 colonies per 100 ml water for fecal coliform bacteria. These limits have been changed from the Existing Permit to reflect the revised Massachusetts State Surface Water Quality Standards for Class SA waters (314 CMR 4.05(4)(a)(4)). Based on the performance of the facility as depicted in Attachment B, the monitoring frequency has been reduced from three (3) times per week to once (1) per month.

The State's Class SA standards have also been revised to include enterococcus bacteria. These new standards are 35 colonies per 100 ml and a daily maximum limit of 104 colonies per 100 ml. However, the EPA has yet to approve these standards and establishing limits on enterococcus cannot be done at this time. Therefore, the fecal coliform limits will remain in the Draft Permit and an enterococcus monthly monitoring requirement has also been established. This decision is also based upon similar permits in Massachusetts, such as the NPDES permit for New England Aquarium.

4. Total Copper

The 1999 permit established a copper monitoring requirement based on data from the permittee's application indicating the possible presence of copper in the effluent. From January 2004-March 2006, total copper has been found to range from below detection limits to 23 ug/l with an average of 4.52 ug/l. In addition, the permittee was required to monitor the concentration of Total Copper in the municipal (freshwater) influent. From January 2004-March 2006, total copper was found to range from below detection limits to 7 ug/l, averaging 2.04 ug/l. The difference in copper levels between the influent and effluent ranged from -5 ug/l (indicating higher levels in the influent) to +23 ug/l (indicating higher levels in the effluent).

The National Recommended Water Quality Criteria lists the chronic and acute levels for total copper in saltwater as 3.1 ug/l and 4.8 ug/l, respectively. Historical data in Attachment B shows that, out of 27 total samples, the chronic level was exceeded by Battelle on 12 occasions and the acute level was exceeded on 10 occasions. In addition, the continuous discharge from Outfall 001 is to a tidal mud flat and receives no dilution from Duxbury Bay. Based on these factors, there is a reasonable potential that the discharge is causing or contributing to a surface water quality violation. Therefore, the Draft Permit contains a monthly average limit of 3.1 ug/l and a daily maximum limit of 4.8 ug/l.

Battelle is required to report the level of total copper in the effluent once (1) per week for the entire permit cycle. However, EPA has created a two year compliance schedule for Battelle to meet the copper water quality-based effluent limit (WQBEL) included in the Draft Permit. The requirements for schedules of compliance are stated in the Massachusetts surface water quality standards at 314 CMR 4.03. The requirements allow, under certain conditions, a compliance schedule to be incorporated into an existing NPDES permit to "afford a permittee adequate time to comply with one or more permit requirements or limitations". With this schedule, Battelle is required to monitor copper concentrations in both the seawater and fresh water influent, evaluate possible sources of copper in the effluent, and replace these sources to the maximum extent practicable. In addition, Battelle is not required to meet the WQBEL until two years after the effective date of the Final Permit.

5. Total Zinc

The monitoring requirements for Total Zinc have been removed from the Draft Permit. The highest Maximum Daily value for the preceding six years was 50 µg/l which is below both the acute criterion of 90 µg/l and the chronic criterion of 81 µg/l, as taken from the National Recommended Water Quality Criteria. Based on the available data, there is not a reasonable potential to exceed surface water quality standards and there is no continued requirement to regularly monitor for zinc in the Draft Permit.

6. Whole Effluent Toxicity

Whole Effluent Toxicity (WET) testing is conducted to determine whether certain effluents, often containing potentially toxic pollutants, are discharged in a combination which produces a toxic amount of pollutants in the receiving water. Therefore, toxicity testing is being used in conjunction with pollutant-specific control procedures to minimize the discharge of toxic pollutants.

Two sources of legal authority explain how regulatory authorities have the legal basis for establishing toxicity testing requirements and toxicity-based permit limits in NPDES permits. Sections 402(a)(2) and 308(a) of the Clean Water Act provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques which may be used to carry out objectives of the Act. Under certain State narrative water quality standards, and Sections 301, 303 and 402 of the Clean Water Act, EPA and the

States may establish toxicity-based limits to implement the narrative "no toxics in toxic amounts".

The regulations at 40 CFR Part 122.44(d)(ii) state, "When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution...(including) the sensitivity of the species to toxicity testing...." The EPA and MassDEP believe that the complexity of this effluent is such that toxicity testing is required to evaluate and address any water quality impacts. The MassDEP in its "Implementation Policy for the Control of Toxic Pollutants in Surface Waters" (February 23, 1990) sets forth toxicity limits according to dilution factors based on perceived risk. Results of these toxicity tests will demonstrate compliance with the Massachusetts Water Quality Standards.

The Draft Permit requires that, upon the discharge of a waste stream associated with a new chemical and/or biological test, the permittee conduct acute and chronic WET testing at Outfall 001. The requirement for acute Whole Effluent Toxicity testing is continued from the Existing Permit. However, the limit is increased from ≥50% in the Existing Permit to ≥100% in the Draft Permit based on the zero dilution afforded by discharge to a tidal mudflat. Previous acute WET testing, conducted in February and March of 2000 and February of 2001, yielded results of ≥100% and thus the frequency has been reduced from twice (2) a year to upon the discharge of wastewater associated with a new chemical and/or biological test. The requirement for Chronic NOEC (no observed effect concentration) testing is added to the Draft Permit based on the zero dilution afforded by the receiving water. Each WET test must be conducted according to EPA Region I protocol as outlined in Attachment A and Attachment B of the Draft Permit.

VII. Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. Sect. 1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits or undertakes, "may adversely impact any essential fish habitat." 16 U.S.C. Sect. 1855(b). The Amendments broadly define "essential fish habitat" (EFH) as "waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." 16 U.S.C. Sect. 1802(10). Adverse impact means any impact which reduces the quality and/or quantity of EFH. 50 CFR Sect. 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative or synergistic consequences of actions.

Essential Fish Habitat is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. Sect. 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999. A review of the relevant essential fish habitat information provided by NMFS indicates that essential fish habitat has been designated for 25 managed species within the NMFS boundaries encompassing the outfall location. A copy of the managed species within the EFH is included in Attachment E of this Fact Sheet. EPA has concluded that the permitted discharge will not likely adversely impact

the EFH and the managed species identified for this general location. This conclusion is based on the amount and frequency of the discharge, as well as effluent limitations and other permit requirements that are identified in this Fact Sheet. These factors are designed to be protective of all aquatic species, including those with EFH designations.

Therefore, EPA has determined that the proposed discharge will not adversely impact the EFH. If adverse impacts are detected as a result of this permit action, NMFS will be notified and an EFH consultation will promptly be initiated. A copy of the Draft Permit has been provided to the NMFS for review and comment.

VIII. Endangered Species Act

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA) grants authority to and imposes requirements upon Federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and habitat of such species that has been designated as critical (a "critical habitat"). The ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) typically administer Section 7 consultations for bird, terrestrial, and freshwater species. The National Marine Fisheries Service (NMFS) typically administers Section 7 consultations for marine species and anadromous fish.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, or plants to see if any such listed species might potentially be impacted by the re-issuance of this NPDES permit. EPA believes the proposed limits are sufficiently stringent to assure that water quality standards will be met and to ensure protection of aquatic life and maintenance of the receiving water as an aquatic habitat. The Region finds that adoption of the proposed permit is unlikely to adversely affect any threatened or endangered species or its critical habitat. If adverse effects do occur as a result of this permit action, or if new information becomes available that changes the basis for this conclusion, then EPA will notify and consultation promptly initiated with both the United States Fish and Wildlife Service and National Marine Fisheries Service.

IX. Monitoring

The permittee is obligated to monitor and report sampling results to EPA and the MassDEP within the time specified within the permit. Timely reporting is essential for the regulatory agencies to expeditiously assess compliance with permit conditions.

X. State Certification Requirements

EPA may not issue a permit unless the State of Massachusetts Department of Environmental Protection with jurisdiction over the receiving waters certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate Sate Water Quality Standards. The staff of the State of Massachusetts Department of Environmental Protection has reviewed the draft permit, and advised EPA that the

limitations are adequate to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR 124.53 and expects that the draft permit will be certified.

XI. Comment Period, Hearing Requests, and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to Sara Green, U.S. EPA, Office of Ecosystem Protection**,** Industrial Permits Branch, 1 Congress Street, Suite 1100, Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

XII. EPA Contact

Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

Sara Green, EPA New England – Region I
One Congress Street, Suite 1100 (CIP)
Boston, MA 02114-2023
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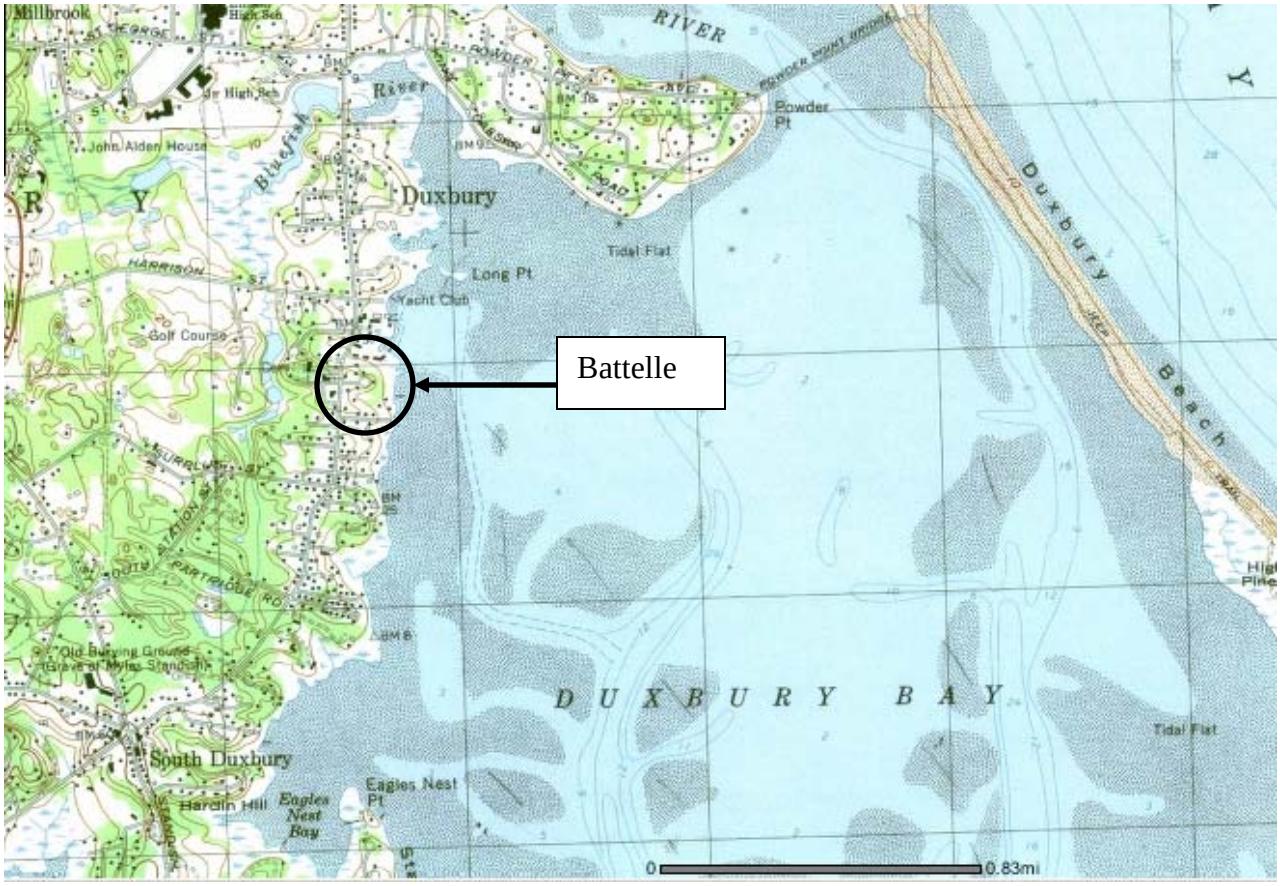
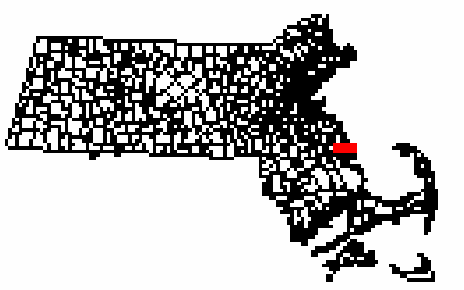
8/27/2007

Stephen S. Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

ATTACHMENT A
Battelle Duxbury Operations (MA0025852)
Site Locus Map





Source: MassGIS USGS Topographic Maps
United States December 1995

ATTACHMENT B
Battelle Duxbury Operations (MA0025852)
Outfall 001 – Sampling Results
January 2004 through March 2006

Monitor Period End Date	Flow (GPD)		pH (s.u.)		Fecal Coliform Bacteria (MPN/100ml)	
	Daily Max	Monthly Average	Daily Max	Daily Min	Daily Max	Monthly Average
31-Mar-06	168014	119488	8.06	7.91	0	0
28-Feb-06	149844	127471	7.91	7.6	0	0
31-Jan-06	145232	86760	7.8	7.72	0	0
31-Dec-05	136089	60202	7.84	7.66	0	0
30-Nov-05	184684	106547	7.91	7.8	0	0
31-Oct-05	150993	33521	7.85	7.63	0	0
30-Sep-05	75643	31471	7.91	7.46	30	0.3
31-Aug-05	77597	61268	7.71	7.51	4	0.2
31-Jul-05	101305	69646	7.69	7.54	0	0
30-Jun-05	131703	90917	7.76	7.56	0	0
31-May-05	154334	118772	7.81	7.54	0	0
30-Apr-05	219577	160694	7.79	7.39	0	0
31-Mar-05	203735	163016	-	-	0	0
28-Feb-05	201058	185209	7.72	7.16	0	0
31-Jan-05	192887	149055	7.71	7.56	4	0.1
31-Dec-04	230604	163262	7.78	7.62	0	0
30-Nov-04	268250	241728	7.87	7.63	0	0
31-Oct-04	274300	219596	7.89	7.74	0	0
30-Sep-04	316762	227282	-	-	2	0.2
31-Aug-04	323638	238750	7.96	7.77	0	0
31-Jul-04	233640	82214	7.91	7.47	4	0.1
30-Jun-04	140604	103471	7.76	7.02	13	0.2
31-May-04	172010	78970	7.74	7.49	0	0
30-Apr-04	236120	174560	7.95	7.81	0	0
31-Mar-04	302167	244036	8.21	7.91	0	0
29-Feb-04	342793	246523	8.03	7.78	0	0
31-Jan-04	332087	191323	7.97	7.77	0	0

Permit Limits	410000	290000	8.5	6.5	43	14
Maximum	342793	246523	8.21	7.91	30	0.3
Minimum	75643	31471	7.69	7.02	0	0
Average	202432.22	139842.67	7.86	7.60	2.11	0.04
Standard Deviation	77346.25	67964.63	0.13	0.21	6.20	0.08
# measurements	27	27	25	25	27	27
# Exceedances	0	0	0	0	0	0

'-' denotes data unavailable

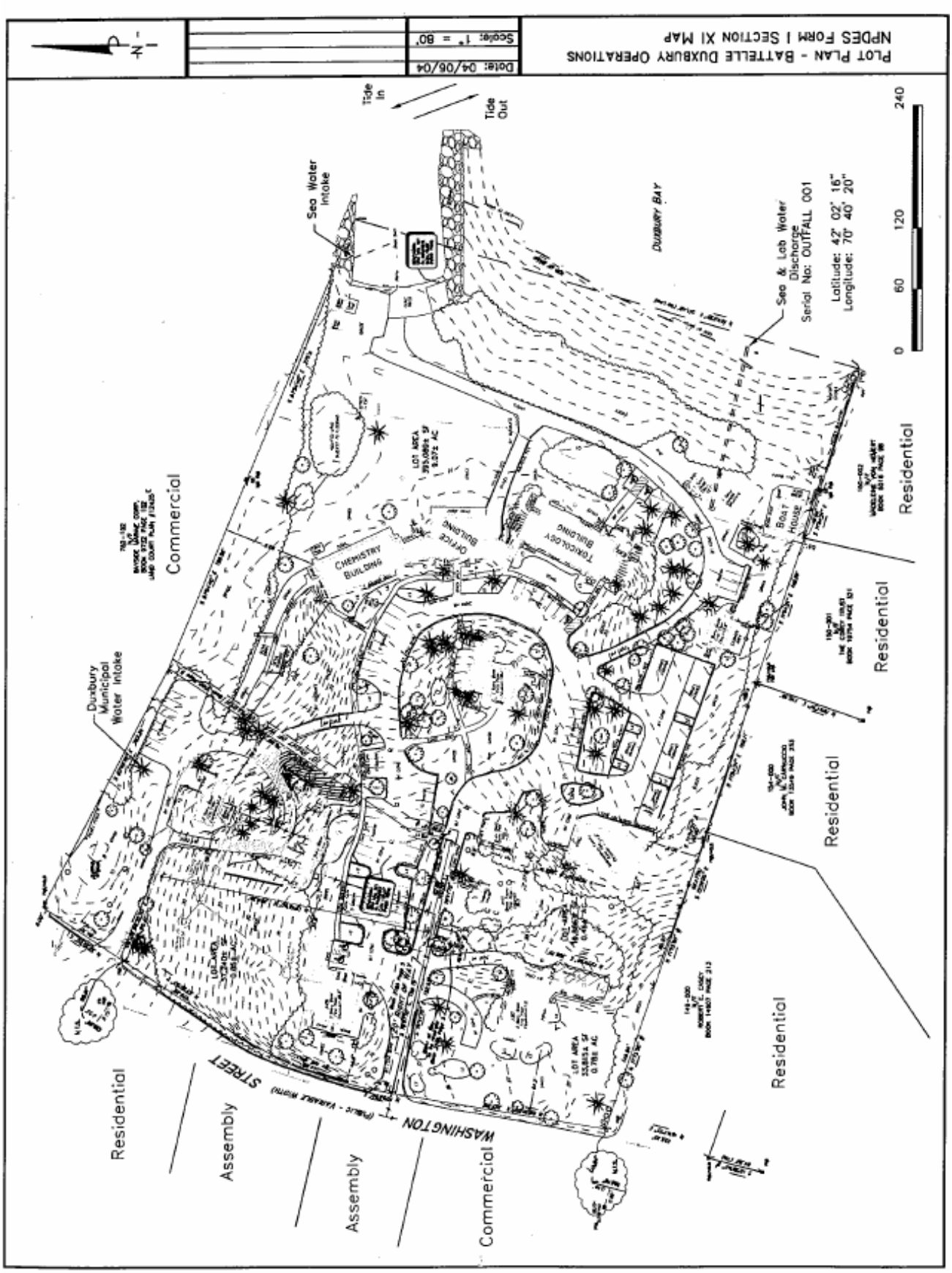
ATTACHMENT B
Battelle Duxbury Operations (MA0025852)
Outfall 001 – Sampling Results
January 2004 through March 2006

Monitor Period End Date	Total Copper (µg/l) (Intake Water)		Total Copper (µg/l) (Effluent)		Total Zinc(µg/l) (Intake Water)		Total Zinc(µg/l) (Effluent)	
	Daily Max	Monthly Average	Daily Max	Monthly Average	Daily Max	Monthly Average	Daily Max	Monthly Average
31-Mar-06	0	0	0	0	0	0	0	0
28-Feb-06	0	0	0	0	5	5	7	7
31-Jan-06	5	5	4	4	5	5	17	17
31-Dec-05	2	2	5	5	5	5	5	5
30-Nov-05	0	0	0	0	0	0	0	0
31-Oct-05	0	0	6	6	23	23	50	50
30-Sep-05	0	0	23	23	8	8	12	12
31-Aug-05	0	0	19	19	0	0	28	28
31-Jul-05	0	0	4	4	0	0	0	0
30-Jun-05	2	2	7	7	4	4	0	0
31-May-05	3	3	0	0	6	6	7	7
30-Apr-05	2	2	7	7	8	8	6	6
31-Mar-05	2	2	0	0	6	6	0	0
28-Feb-05	5	5	3	3	7	7	0	0
31-Jan-05	5	5	3	3	14	14	0	0
31-Dec-04	0	0	0	0	0	0	9	9
30-Nov-04	7	7	2	2	5	5	6	6
31-Oct-04	2	2	0	0	0	0	0	0
30-Sep-04	0	0	0	0	0	0	0	0
31-Aug-04	5	5	5	5	5	5	0	0
31-Jul-04	3	3	10	10	0	0	10	10
30-Jun-04	0	0	0	0	0	0	0	0
31-May-04	0	0	13	13	0	0	4	4
30-Apr-04	4	4	5	5	6	6	0	0
31-Mar-04	3	3	3	3	0	0	5	5
29-Feb-04	2	2	0	0	0	0	0	0
31-Jan-04	3	3	3	3	4	4	0	0

Permit Limits	Report	Report	Report	Report	Report	Report	Report	Report
Maximum	7	7	23	23	23	23	50	50
Minimum	0	0	0	0	0	0	0	0
Average	2.04	2.04	4.52	4.52	4.11	4.11	6.15	6.15
Standard Deviation	2.08	2.08	5.85	5.85	5.23	5.23	10.94	10.94
# measurements	27	27	27	27	27	27	27	27
# Exceedances	NA	NA	NA	NA	NA	NA	NA	NA

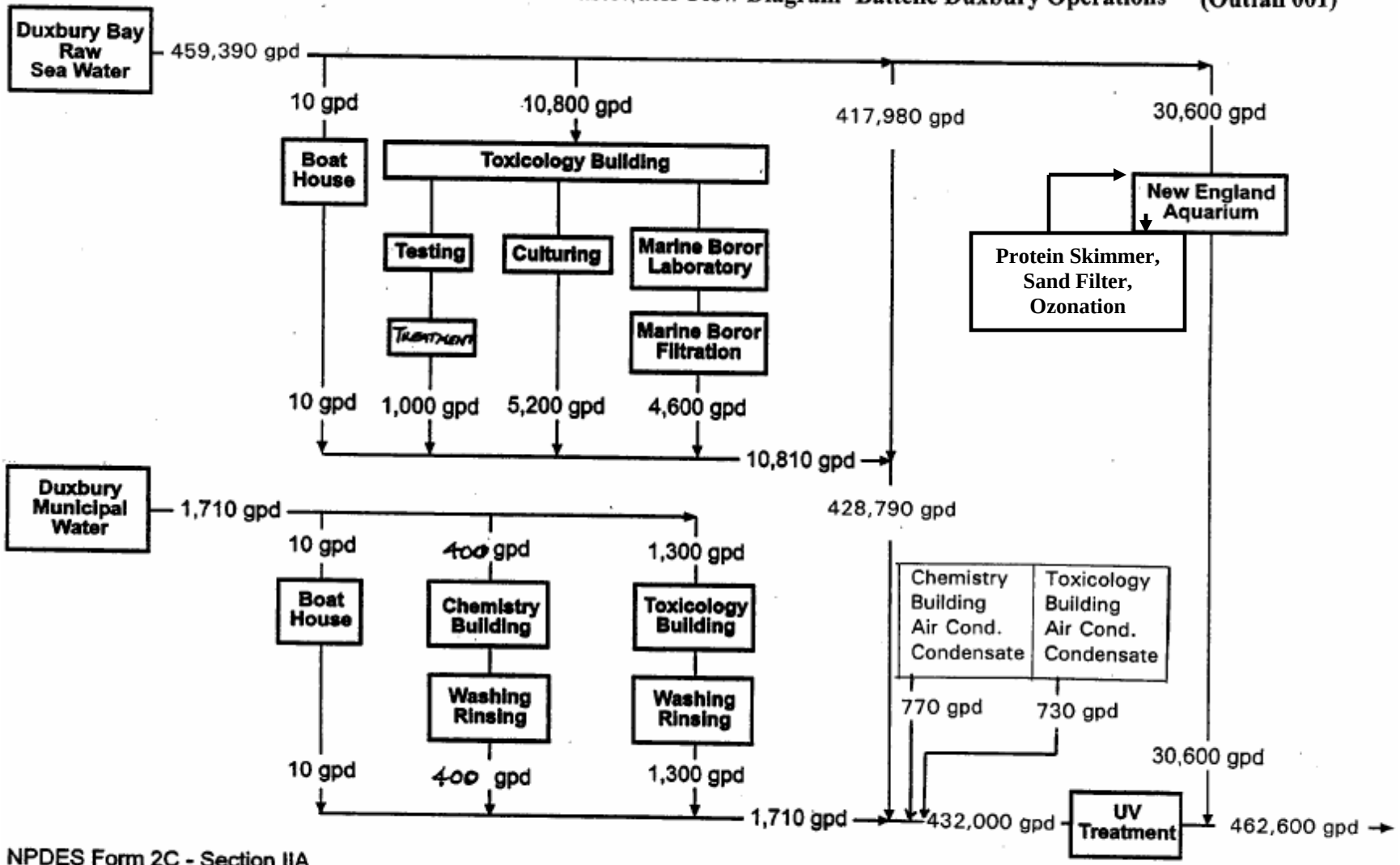
'-' denotes data unavailable

ATTACHMENT C
Battelle Duxbury Operations (MA0025852)
Detailed Site Map and Outfall Location



ATTACHMENT D
Battelle Duxbury Operations (MA0025852)
Schematic Wastewater Flow Diagram*

Schematic Maximum Wastewater Flow Diagram- Battelle Duxbury Operations (Outfall 001)



NPDES Form 2C - Section IIA
Wastewater Flow Diagram
3-26-04

Revised 5/9/07

*All values represent maximum flow conditions

ATTACHMENT E
Battelle Duxbury Operations (MA0025852)
Summary of Essential Fish Habitat (EFH) Designation

Outfall 001 - 10' x 10' Square Coordinates

Boundary	North	East	South	West
Coordinate	42°10.0' N	70°40.0' W	42°00.0' N	70°50.0' N

Square Description (i.e. habitat, landmarks, and coastline markers): Atlantic Ocean waters within the square within Massachusetts Bay east of Kingston, MA., and Marshfield, MA. From Kingston Bay and Kingston to Power Point in Duxbury, MA, along with Rexhame Beach in Marshfield, MA., to the North River Inlet in Marshfield, MA. Includes a disposal site just east of Plymouth Horn on the end of Gurnet Pt. at the tip of Duxbury Beach.

Species	**Eggs**	**Larvae**	**Juveniles**	**Adults**
Atlantic Cod (*Gadus morhua)*	X	X	X	X
Haddock (*Melanogrammus aeglefinus)*	X	X		
Pollock (*Pollachius virens)*	X	X	X	X
Whiting (*Merluccius bilinearis)*	X	X	X	X
Offshore hake (*Merluccius albidus)*				
Red hake (*Urophycis chuss*)	X	X	X	X
White hake (*Urophycis tenuis)*	X	X	X	X
Redfish (*Sebastes fasciatus)*	n/a			
Witch flounder (*Glyptocephalus cynoglossus)*				
Winter flounder (*Pleuronectes americanus)*	X	X	X	X
Yellowtail flounder (*Pleuronectes ferruginea)*	X	X	X	X
Windowpane flounder (*Scopthalmus aquosus)*	X	X	X	X
American Plaice (Hippoglossoides platessoides)	X	X	X	X
Ocean pout (*Macrozoarces americanus)*	X	X	X	X
Atlantic halibut (*Hippoglossus hippoglossus)*	X	X	X	X
Atlantic sea scallop (*Placopecten magellanicus)*	X	X	X	X
Atlantic sea herring (*Clupea harengus*)		X	X	X
Monkfish (*Lophius americanus)*	X	X		X
Bluefish (*Pomatomus saltatrix)*			X	X
Long finned squid (*Loligo pealei)*	n/a	n/a	X	X
Short finned squid (*Illex illecebrosus)*	n/a	n/a	X	X
Atlantic butterfish (*Peprilus triacanthus)*	X	X	X	X
Atlantic mackerel (*Scomber scombus*)	X	X	X	X
Summer flounder (*Paralicthys denatatus)*				X
Scup (*Stenotomus chrysops)*	n/a	n/a	X	X
Black sea bass (*Centropistus striata)*	n/a			X
Surf clam (*Spisula solidissima)*	n/a	n/a	X	X
Ocean quahog (*Artica islandica)*	n/a	n/a		
Spiny dogfish (*Squalus acanthias)*	n/a	n/a		X
Tilefish (*Lopholatilus chamaeleonticeps)*				
Bluefish tuna (*Thunnus thynnus)*			X	X